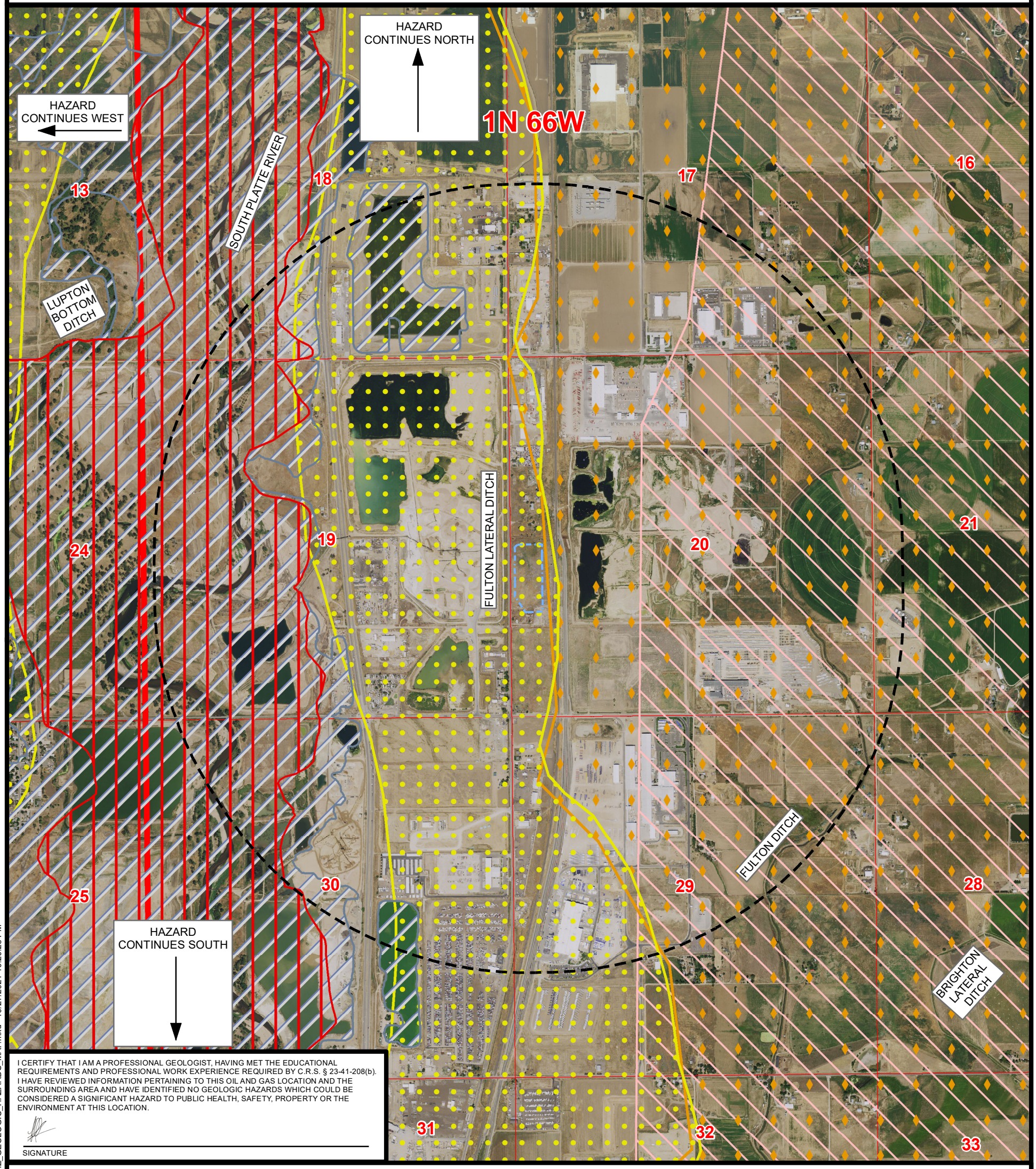
GEOLOGIC HAZARD MAP
PARSNIP FED HZ
SECTION 20, TOWNSHIP 1 NORTH, RANGE 66 WEST, 6TH P.M., WELD COUNTY, COLORADO



I CERTIFY THAT I AM A PROFESSIONAL GEOLOGIST, HAVING MET THE EDUCATIONAL REQUIREMENTS AND PROFESSIONAL WORK EXPERIENCE REQUIRED BY C.R.S. § 23-41-208(b). I HAVE REVIEWED INFORMATION PERTAINING TO THIS OIL AND GAS LOCATION AND THE SURROUNDING AREA AND HAVE IDENTIFIED NO GEOLOGIC HAZARDS WHICH COULD BE CONSIDERED A SIGNIFICANT HAZARD TO PUBLIC HEALTH, SAFETY, PROPERTY OR THE ENVIRONMENT AT THIS LOCATION.

SIGNATURE

NOTES:
1. COLLAPSIBLE SOILS AS MAPPED DO NOT CONSTITUTE A GEOLOGIC HAZARD. COLLAPSIBLE SOILS ARE EXTENSIVE BEYOND MAP LIMITS. (DATA SOURCE: CGS/CLIENT)
2. PER THE COLORADO GEOLOGIC SURVEY (CGS), EG-14 COLLAPSIBLE SOILS ARE PRESENT IN THE VICINITY OF THE LOCATION. THESE SOIL TYPES ARE PRONE TO BOTH WATER EROSION AND SOIL BLOWING. KMOG WILL DEPLOY DUST MITIGATION MEASURES PROVIDED IN THE DUST MITIGATION PLAN THAT WILL MITIGATE AND MINIMIZE WIND EROSION. THE GRADING AND DRAINAGE DESIGN OF THE LOCATION, IN ADDITION TO IMPLEMENTATION OF STORMWATER CONTROLS PER KMOG'S STORMWATER MANAGEMENT PLAN, WILL MITIGATE AND MINIMIZE WATER EROSION. IN ACCORDANCE WITH KMOG'S STANDARD OPERATING PROCEDURE, AND AS OUTLINED IN THE TOPSOIL PROTECTION PLAN, A GEOTECHNICAL EXPLORATION WILL BE COMPLETED BY A GEOTECHNICAL ENGINEER PRIOR TO THE COMMENCEMENT OF PAD CONSTRUCTION CONSISTING OF MULTIPLE SOIL BORES ACROSS THE LOCATION. DURING PAD CONSTRUCTION, COLLAPSIBLE SOILS (IF PRESENT) WILL BE OVER EXCAVATED AND THROUGHOUT CONSTRUCTION ALL SOIL WILL BE MOISTURE CONDITIONED AND COMPACTED. PROPER SLOPING AND BENCHING TECHNIQUES WILL BE ADHERED TO IN ACCORDANCE WITH OSHA REGULATIONS AND STEEP EMBANKMENTS WILL BE AVOIDED. PERMANENT FACILITY EQUIPMENT WILL BE INSTALLED ON DEEP-FOUNDATION ELEMENTS CONSISTING OF HELICAL PILES. NONE OF THE IDENTIFIED SOILS WITHIN THE SURROUNDING AREA ARE CONSIDERED A SIGNIFICANT HAZARD TO PUBLIC HEALTH, SAFETY, PROPERTY, OR THE ENVIRONMENT.
3. THIS MAP IS A COMPILATION OF PUBLICLY AVAILABLE DATA. THE ACCURACY AND COMPLETENESS OF SAID DATA HAS NOT BEEN VERIFIED BY 609 CONSULTING, LLC. EXISTING CONDITIONS MAY DIFFER FROM WHAT IS SHOWN.

Legend

- PROPOSED WORKING PAD SURFACE
- 1 MILE BUFFER - WORKING PAD SURFACE
- 100-YEAR FLOODWAY (EFFECTIVE)
- 100-YEAR FLOODPLAIN (EFFECTIVE)

COLLAPSIBLE SOILS

- EG-14 EOLIAN (WIND-BLOWN) DEPOSITS
- EG-14 DUNE AND SHEET SAND DEPOSITS
- EG-14 CRETACEOUS AND TERTIARY FORMATIONS

References:

FLOODPLAIN
- ECMC Floodplains (FEMA): https://ecmc.state.co.us/maps.html#/gisonline
- National Flood Hazard Layer (NFHL): https://hazards-fema.maps.arcgis.com/apps/webappviewer/
- Weld County: https://www.weldgov.com/Government/Departments/Planning-and-Zoning/Floodplain-Management

SURFACE MINES
- ECMC DRMS Mine: https://ecmc.state.co.us/maps.html#/gisonline
- Weld County: https://www.weldgov.com/Government/Departments/Planning-and-Zoning

EARTHQUAKES
- USGS: https://www.usgs.gov/natural-hazards/earthquake-hazards/science/

LANDSLIDES
- CGS: https://cologeosurvey.maps.arcgis.com/apps/webappviewer/

SUB-SURFACE MINES
- ECMC Coal Mine: https://cologeosurvey.maps.arcgis.com/apps/webappviewer/
- Roberts, S.B., Hynes, J.L., and Woodward, C.L. Maps Showing the Extent of Mining, Locations of Mine Shafts, Adits, Air Shafts, and Bedrock Faults, and Thickness of Overburden above Abandoned Coal Mines in the Boulder-Weld Coal Field, Boulder, Weld and Adams Counties, Colorado. 1:48:000. Denver, CO: US Geological Survey: 2001
- Ivery, J.B., and Hynes, J.L., Subsidence Hazard Map Boulder-Weld Coal Field Boulder and Weld Counties, Colorado. Map No. 7361-6 1:24,000. Colorado Geological Survey: 1974

COLLAPSIBLE SOILS
- Collapsible Soils of Colorado: https://cologeosurvey.maps.arcgis.com/apps/webappviewer/index.html?id=a6f816b35fb64d3da096e84af661f070
- White, J.L. and Greenman, C., Collapsible Soils in Colorado, Engineering Geology 14, Colorado Geological Survey, 2008.

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Sheridan, Wyoming 82801
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N

NAD83 CO-Nft
1" = 1,500ft
0 750 1,500

Drawn by: AK **Date:** 25 Oct 2024
Revised: **Date:**

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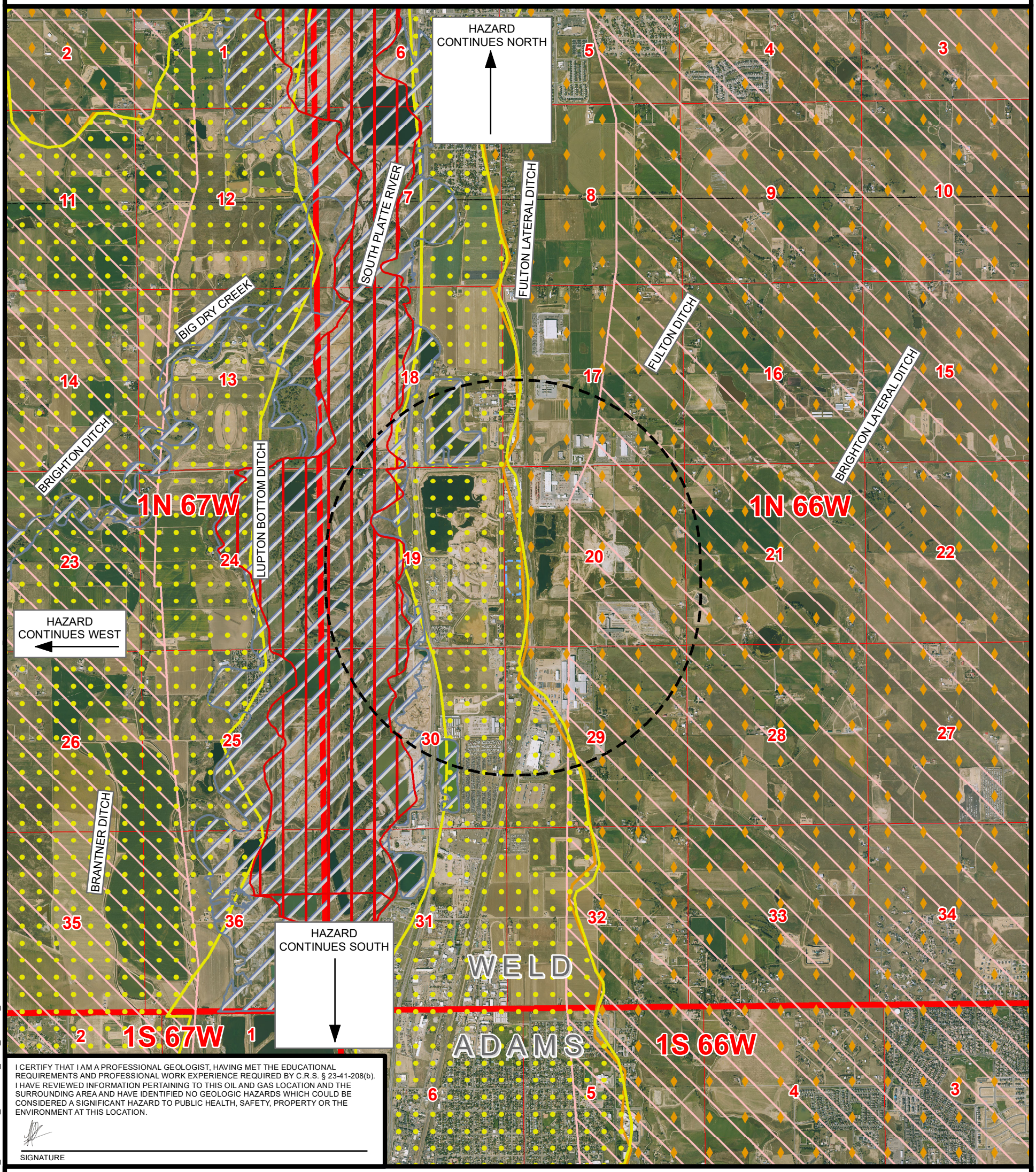

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Drawn by: AK Date: 25 Oct 2024
Revised: Date:

N
NAD83 CO-Nft
1" = 3,000ft
0 1,500 3,000

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